



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,773	02/08/2002	Walter Kraft	SCHSM-011XX	2015
7590 03/18/2005 WEINGARTEN, SCHURGIN, GAGNEBIN & LEBOVICI LLP Ten Post Office Square Boston, MA 02109			EXAMINER TUCKER, WESLEY J	
			ART UNIT 2623	PAPER NUMBER

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,773

Applicant(s)

KRAFT ET AL.

Examiner

Wes Tucker

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 17 and 21 are objected to under 37 CFR 1.75(c) as being in improper form because they are dependent on multiple claims namely claims 14, 1, and 19. Claims 17 and 21 depend on each of claims 14, 1, and 19 and not in the alternative form. See MPEP § 608.01(n). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims suffer from such poor language that exactly what is claimed is difficult to understand and therefore the meets and bounds of the claims are unascertainable. A non-limiting example from claim 1 is "determining a correction mask for change of the sharpness from image data representing the image to be sharpened, whereby elements of the correction mask for the change of the sharpness and/or local sharpness describe a local change of the sharpness..." There are many other passages like this wherein

Art Unit: 2623

what is being described is unclear. This is just one example from an independent claim.

The claims have been addressed as can best be interpreted.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The disclosed invention is inoperative and therefore lacks utility. Claim 15 is rejected under 35 U.S.C. 101 because a computer "program" cannot be claimed by itself. It must be claimed within a computer readable medium. "Program for loading onto or running on a computer..." is not appropriate language. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 and 10-21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,757,442 to Avinash et al.

With regard to claim 1, Avinash discloses a process change alteration local sharpness of a photographic image having a multitude of image elements (column 3, lines 1-10). Avinash discloses the invention to be in the field of contrast enhancement to make detailed structure more discernible in magnetic resonance imaging, which is interpreted as a type of photography.

Avinash further discloses determining a correction mask for change of the sharpness from image data representing the image to be sharpened, whereby elements of the correction mask for the change of the sharpness and/or local sharpness describe local change of the sharpness (column 17, lines 1-20). Here Avinash discloses the determination of a mask depending on location in the image as well as image information.

Avinash further discloses using, in addition to an image property, information relating to the image for determination of the elements (column 17, lines 1-5). Here Avinash discloses determining the contrast enhancement according to the differences between different areas in the image according to very strong edge information or low contrast areas. This is interpreted as information relating to the image.

With regard to claim 2, Avinash discloses the process according to claim 1, wherein the image property is a local contrast (column 17, lines 1-5 and abstract).

Art Unit: 2623

Avinash discloses low contrast areas, which is interpreted as a local contrast description.

With regard to claim 3, Avinash discloses the process according to claim 1 wherein the additional information is at least one local image property, which is respectively present locally in the vicinity of the location and/or locations which the elements of the correction mask for the change of the sharpness relate (column 17, lines 1-12). Avinash discloses that the local image property is the image content information such as edge information, low contrast areas, etc.

With regard to claim 4, Avinash discloses a process according to claim 3, wherein the local image property is at least one of the colour tone, colour saturation and the colour contrast (column 5, lines 61-65). Here Avinash discloses taking color of the image into consideration.

With regard to claim 5, Avinash discloses a process according to claim 1, wherein the additional information is image content information on the image content (column 17, lines 1-12). Avinash discloses that the local image property is the image content information such as edge information, low contrast areas, etc.

With regard to claim 6, Avinash discloses a process according to claim 5, wherein the image information is at least one of information obtained from an analysis of

Art Unit: 2623

the image data and information associated with the image data and available to the correction process addition to the image data (column 10, lines 16-34 and column 17, lines 4-10). Here the information from the analysis of the image is interpreted as the determination of the image content by the structure masking found in column 10, which is later used to mask according to the determined image content such as strong edge information.

With regard to claim 7, Avinash discloses a process according to claim 1, further comprising following steps carrying out an analysis of the image for determining the image content information to recognize by analysis of the image to be corrected or an image derived therefrom at least one characteristic image region which has a multitude of image elements (column 10, lines 16-34 and column 17, lines 4-10). Here the analysis is interpreted as the determination of the image content information and the characteristic image region, which has a multitude of image elements is interpreted as an image area containing a lot of structure.

Avinash further discloses assigning nominal image sharpness nominal image or nominal sharpness range to at least one recognized characteristic image region (column 13, lines 55-67). Here nominal is interpreted as very little or no image sharpening and Avinash discloses a multiplier y that determines the degree of sharpness assigned to an image element.

Avinash further discloses carrying out the change by way of the correction mask for the change or local change of the sharpness so that elements of the correction mask

Art Unit: 2623

which relate to the image elements, which are included in at least one recognized characteristic image region cause at least an approximation of the image sharpness to the assigned nominal image sharpness or the assigned nominal image sharpness range (column 18, lines 38-48). Here the nominal image sharpness range is interpreted as the dynamic range as they relate to a lookup table.

With regard to claim 8, Avinash discloses the process according to claim 7, including the further step of determining a degree of association on the basis of the analysis, which fixes the degree of association or the probability of association of an image element characteristic image region (column 18, lines 38-48). Here the degree of association is interpreted as the dynamic mapping function of relating image data to the contrast.

Avinash further discloses determining the change of the image sharpness or local image sharpness in consideration of nominal image sharpness or the nominal image sharpness range as well as consideration of the degree of association assigned to the respective image elements (column 18, lines 48-67). Again the nominal image sharpness is interpreted as mapping of the contrast range.

With regard to claim 10, Avinash discloses the process according to claim 6, including the further steps of carrying out an analysis of the image be corrected an image derived therefrom for recognizing transitions between image regions which include a multitude of neighboring image elements and which have a different

Art Unit: 2623

structuring; whereby the determination of the elements of correction mask for change the image sharpness carried out depending on whether or not the elements relate to the transitions (column 5, lines 22-33 and column 10, lines 16-34). Avinash discloses modifying the contrast enhancement of the image by determining differences between different areas of the image and as a function of the image content structure.

With regard to claim 11, Avinash discloses the process according claim 6, wherein the information assigned to the image data relates to the position of artefacts in the image, and whereby the elements of the correction mask for the change of image sharpness are determined depending on whether they relate to locations in the image where artefacts are present (column 2, lines 61-67). Avinash discloses taking noise or artifacts into consideration.

With regard to claim 12, Avinash discloses the process according to claim 2, wherein based on the local contrast information a base mask for the change of the sharpness is determined the elements of which are corrected based on the associated elements of an additional information mask for obtaining the correction mask for the change the sharpness, whereby the additional information mask is determined from the additional information (column 10, lines 16-34 and column 17, lines 1-20). Avinash discloses a structure-determining mask as an additional mask used to calculate information used to calculate the contrast-enhancing mask.

With regard to claim 13, Avinash discloses the process according to claim 1, comprising the further steps of applying an image detail reduction process to the image data be sharpened so that the coarse image data resulting therefrom represent a coarse image with less details than the image to be sharpened, whereby the coarse image includes a multitude of coarse image elements (column 16, lines 56-67). Avinash discloses using a low-pass filter to smooth image data.

Avinash further discloses that on the basis of the local contrast information determining coarse correction mask, which describes a correction of the image sharpness of the coarse image (column 17, lines 1-12). Avinash discloses performing contrast enhancement after smoothing or low-pass filtering.

Avinash further discloses that based on additional information correcting elements of the coarse correction mask, whereby the correction mask for the change of the image sharpness corresponds corrected coarse correction mask or is determined on the basis thereof (column 17, lines 1-20).

With regard to claim 14, Avinash discloses a device for the focusing of a photographic image with a multitude image elements, comprising correction mask determining for determining a correction mask change of the image sharpness from the image data which represent the image be sharpened, whereby element of the correction mask for the change of the image sharpness describe the local change the image sharpness, and for determining the elements on the basis of an image property and additional information relating to image. (column 3, lines 1-10 and column 17, lines 1-

Art Unit: 2623

20). Here Avinash discloses determining the contrast enhancement according to the differences between different areas in the image according to very strong edge information or low contrast areas. This is interpreted as information relating to the image. Also Avinash discloses the invention for use in magnetic resonance systems, which is interpreted broadly as a photographic focusing.

With regard to claim 15, Avinash discloses a program for loading onto or running on a computer for carrying out the process according to claim 1 (column 4, lines 30-35).

With regard to claim 16, Avinash discloses a computer program medium on which the program of claim 15 is stored (column 4, lines 25-30). Avinash discloses a memory circuit.

With regard to claim 17, Avinash discloses an image reproduction device, comprising all the one devices selected listed in the group of: a device according to claim 14, a control unit which carries out the process according to claim 1, and a computer on which the program of claim 16 is loaded on or runs (column 4, lines 30-39).

With regard to claim 18, Avinash discloses an image reproduction device according to claim 17, which is a printer, a monitor, and a computer with monitor (column 4, lines 35-39).

Art Unit: 2623

With regard to claim 19, Avinash discloses a computer programmed for carrying out the process of claim 1 (column 4, lines 30-39).

With regard to claim 20, Avinash discloses a computer program medium having registered therein a program for carrying out the process of claim 1 (column 4, lines 30-39).

With regard to claim 21, Avinash discloses an image reproduction device, comprising at least one device selected from the group of

- a device according to claim 14,
- a control unit which carries out the process according to claim 1, and
- a computer according to claim 19 (column 4, lines 30-39).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Paten 6,757,442 to Avinash.

With regard to claim 9, Avinash does not explicitly disclose the details of the operation with regard to color. Avinash does however disclose the process according claim 6, wherein the image data for the image elements fix intensity values and image properties which at least include the brightness and the intensity (column 10, lines 63-67), and wherein the analysis of the image data for the determination of the image content information includes the steps of:

providing an assignment rule which determines which (intensity) value or (intensity) values belong to at least one pre-selected characteristic (intensity) value, whereby each of the pre-selected (intensity) values is assigned a nominal image sharpness or a nominal image sharpness range (column 18, lines 48-67). Here the assignment rule is interpreted as the look-up table, which relates the measure of contrast enhancement with a particular intensity or pixel value.

Avinash further discloses whereby the determination of the correction mask alteration of the image sharpness depending on the image information includes steps of carrying out the determination of the elements of the correction mask for change of image sharpness depending on the association of the (intensity) value to one of the at least one characteristic (intensity) value, whereby the determination is carried out in consideration of the nominal image sharpness or the nominal image sharpness range which is associated with the characteristic (intensity) value (column 17, lines 1-20). Here the sharpness enhancing masking process is described with regard to the intensity values of the image. The intensity values are considered for sharpening in regards to specific ranges as well as a look up table for contrast enhancement.

Avinash teaches that while his invention is discussed with regard to operation performed according to intensity values that the same technique can be used for other parameters of an image encoded for individual pixels such as frequency or color. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the contrast enhancement of Avinash in regard to color values as well as intensity values as both values are simply represented on a scale of pixel values.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 703-305-6700. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

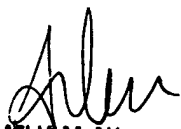
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/072,773
Art Unit: 2623

Page 14

Wes Tucker

3-8-05



AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600